ABSTRACT OF THE DISCLOSURE

The invention covers method, device and application of production of hydrogen and carbon by pyrolysis based on natural gas, methane or other organic gases as raw material. The method for precipitation of solid carbon is characterized by the use of finely distributed carbon dust as catalyst for the precipitation process. The device is designed as a reaction chamber that contains the catalyst. The temperature in the chamber is controlled by supply of electrical power or other energy. In addition the invention covers the application of compact pyrolysis systems in vehicles, for pre-processing of gases containing hydrocarbons and for fuel production for polymer fuel cells that generate electrical power for propulsion of the vehicle.